CLAIMS

1. A process for the blind demodulation of a linear-waveform source or transmitter in a system comprising one or more sources and an array of sensors and a propagation channel, said process being characterized in that it comprises at least the following steps :

- the symbol period T is determined and samples are taken at T_e such that $T = IT_e$ (I being an integer);
- a spatio-temporal observation z(t), the mixed sources of which are symbol trains from the transmitter, is constructed from the observations $x(kT_e)$;
- an ICA-type method is applied to the observation vector z(t) in order to estimate the L_c symbol trains $\{a_{m-i}\}$ that are associated with the channel vectors $\hat{h}_{z,j}=\hat{h}_z(k_j)$;
- the L_c outputs $(\hat{a}_{m,j}, \hat{h}_{z,j})$ are arranged in the same order as the inputs $(a_{m-i}, h_z(i))$ so as to obtain the propagation channel vectors $\hat{h}_{z,j}=\hat{h}_z(k_j)$; and
- the phase α_{imax} associated with the outputs is determined.

2. The process as claimed in claim 1, characterized in that the propagation channel parameters are estimated in order to determine the carrier frequency so as to compensate for the symbol trains in order to obtain them in baseband.

3. The process as claimed in claim 1, characterized in that it includes a step of estimating the angle θ_p and delay τ_p parameters of the propagation channel.